

Note Book

Sept. 14 - Oct. 8 1929

Japan.

W. J. Morse.

Not noted

Sept. 10:-

Nahkaurai to Makabetsu - 23
am

Written by

Left Ashigama - 9.05 AM
at Nagayama - 9.25 AM
Bus fare 20.00

Saturday, Sept. 14, 1929.
Asahigawa, Hokkaido, Japan.
Cool and slight rain early
in the morning. Left
Asahigawa by bus for Nagayama
where the Kamikawa Exper.
Sta. is located.
Nagayama Exper. Sta.
Soybean varieties

Oyachi - Early - Best
around Asahigawa. Seed
greatly affected by insects
in this district (Pod ^{borer} moth).
Large yellow seed with dark
brown hilum. Sometimes
more than 10% affected by
pod moth.

Wasehadaka - Early smooth.
Seed yellow. Medium sized
with brown hilum. Ripe
Sept. 21 (1927). 1 hectare gave
6515 kilos seed & plants.

Seed yield 2790 kilos per
hectare. Plants ⁵⁰⁰ 2788 kilos
per hectare. 344 to 70
/ ton. 730 gms. 70 94

This variety (seed) affected
by pod with 6.7 70.

Uyachin - Harvested 24 Sept.

4000 kilos grain & plants
per hectare - Seed yield 2130
kilos - plants 2338 kilos.

400 - 1/2 to - 340

710 gms. 91 70

affected by insects 17 70

aver. yield 2363 kilos per hectare

Date of planting (1913 - 1924)

aver. sowing date - May - 13.

Earliest date - " 10

Latest " - " 20

Date germinate - " 31

" " earliest - " 21

Latest germination June 3

Beginning to flower

Aver. date July 21

Earliest " " 18

Latest " " 24

Maturity of grain

aver. date of ripening Sept 21

Earliest " " " 13

Latest " " " 29

Length of season

From date of germination

Aver. length of season 131

shortest " " " 125

longest " " " 137

Height of plants

Average (Jap. near) 2.17 ft.

shortest 1.56 "

Tallest 2.65 "

Yielding of seed per acre

Aver. yield per ton 2.101 koku

Smallest " " " 1.472 "

Largest " " " 2.939 "

Aver. per ton 70.515 koku

Weight of plants ⁴ (dry wt)

avg. yield per ton 62.388 ka

Smallest " " " 24.360 "

Largest " " " 110.400 "

Grain of $\frac{1}{10}$ of 1 to .

avg. no 335

Insect damage (Pod moth)

Proy night. grain. 26.9

Brown - dry meas. 33.9

Akasaya - Red ^{yellow} pod - Late.

Rangkoishi - yellow seed - name
of place

Chuseihradaka - Middle

season smooth. yellow

Kanoro - yellow - Means
onward dir - Late

No. 3393 - yellow. Hybrid. med.
sized with nearly bl. tincture.
Very late variety

No. 1508 - yellow - Hybrids.
brown hilum - med. large -
early variety

No. 65 - Bred at Main station.
Med. large with pale hilum
ex. bean - Late.

No. 8 - Tokachi Sta. bred. Large
yellow bean with dark br.
hilum - Early, ex.

Kamikawa - Selected - 941
Sta. No. Med. season. Yellow
with br. hilum - med.
small, smooth variety.
Good for tofu.

No. 777 - Late, yellow with
br. hilum. Med. sized
seed. ex. seed.

Am. farmer farmers.
Late Sept. to Oct., and
most farmers in this
district grow the Hyachi
variety.

yield obtained by farmers.
(aver) 300 kin (116) per
 $\frac{1}{4}$ acre,

Price obtained by farmers
for soybean seed 6-7 yen
per 100 lbs. at this time
~~2 years (harvest time)~~ ~~1925~~

Fertilizer for soybeans. Acid
phosphate - 7 Kan per
 $\frac{1}{4}$ acre. straw ashes -

Green manure crops.
for rotation - hairy vetch
and red clover are the
best.

After red clover - best
results are obtained
with oats or corn.

After red clover - Zyri
Oats - 1925 - red clover planted
between oats in spring
Clover - 697 Kan per $\frac{1}{4}$ acre

Flax - Clover planted after 1st cut
clover 214 kum per $\frac{1}{4}$ acre

In 1926, red clover was
turned under - corn and
cloats planted

Corn - 8.74 sacks (100 kum) per
 $\frac{1}{4}$ acre (4.40^{yen} per 100 kum)

Wats - 9.24 sacks (100 kum)
per $\frac{1}{4}$ acre. 3.50¥ per kum.
Red clover - 23.88¥ per
 $\frac{1}{4}$ acre.

Clover from old field. 14.45¥
per $\frac{1}{4}$ acre

Pure profit from corn 19.68¥
... dal 10.95¥

Use of soybeans in this
section. Mostly used for
family purposes - miso.
Soy sauce from factories.
Seed beyond family use
sold to village merchants
who sell to Utsunomiya, Shoyu
manufacturers & tofu makers.

Method of planting. Row by
drill line with horse and
seed then planted by hand.
Rows 15 in. apart by
Japan meas. Beans - 2 or
3 - dropped every 7 in.
by Jap. meas. in row.

Along edges of rice fields
black seeded varieties,
are mostly used, and
grown for grain which
is used at home for
baking and other food uses.

Seed beyond farmers
food needs are traded
with other people for
different products.

Sund Daykin Bull.

Mr. Yutaka Tamayama
Hokkaido Agr. Eng.
Chief Dir. Kamikawa Pr. Sta

Hokkaido Ag. Exp. Sta.

Nagayama.

Hokkaido, Japan.

Green manure experiments
with soybeans and red
clover for sugar beets. The
soybeans and clover were
grown in 1928 and sugar
beets in 1929. The plots of
sugar beets made a much
better growth and looked
much healthier on the
clover than on the soybean
plots.

Red clover, George clover,
and hairy vetch were
used in green manure
experiments with rice.
The seed of these clovers was
sown when the bloom was
dropping from the rice

plants in August. Red
down and hairy catch
give the best results. The
George clover is generally
smothered out by heavy
snows in the winter time.

Sagehen variety plot tests.
The smooth late varieties
make an excellent growth
and are well fruited. Much
latter than the smooth
varieties we have tried in
the states. The plants here
run from 3-3½ ft. high
and look very promising.
The Alyachis variety is
a stiff stem sort, and
very heavily seeded. Look
as though it might be
very promising for the

corn belt states as it is
now beginning to yellow
and lose leaves.

All of the soybean varieties
looked exceedingly well at
this station. They have made
an excellent growth and
all are well finished.

Left Asahigawa 9. A. M.

Ar. Nagayama 9.25 A.M.

Bus fare Asahigawa to Nagayama .20

Left Nagayama 2.5 P.M.

Ar. Asahigawa 4.50 P.M.

Bus fare Asahigawa 1.5

Car fare Asahigawa to Sapporo 2.03

Left Asahigawa 5.50 P.M.

Ar. Sapporo 9.20 P.M.

Sunday, Sept. 15, 1929

Cool and clear. In the morning wrote official correspondence. After lunch, went to Maryanna Park to gather seed of *Lespedeza* sp. and *Desmodium* sp. Also gathered seed of a vetch which was growing quite abundantly in some cut over land. It was found that pods had formed on some kind of and the seed was fully one-half developed. It will be interesting to obtain seed from here and compare with plants from seed gathered in the Mt. Fuji region.

Stopped at the Yamato Seed Co's trial

Experimental farm and
had a visit with the
superintendent in charge.
He had us come in and
served us yellow Chinese
watermelon. We then
looked over the trial
grounds.

They had two varieties of
velvet beans from the Nicholson
Seed Co. in the U.S. One a
winning variety and the other
the bush ~~or~~ bunch variety.
Both had made fairly good
growth. The bunch variety
was about 2 ft. high. Also
both had fully developed
flower racemes with nearly
full grown buds.

The superintendent is
doing more or less work
with peas and potatoes.
He is trying out the

Winter Field Pea obtained
from Texas. It did not
look like the seed of the
Austrian Winter pea. He
desires varieties of peas
and vetches from our
office.

Mrs. Lpez de la Cruz, plants
which were filled with flower
two weeks ago had very
few seed pods. Occasionally
a plant was found with
quite a few pods but small
in proportion to the number
of flowers borne.

Carefare interpreter
& self to Maruyama Park
and return

Monday, Sept. 16, 1929

Cool and clear.

In the morning wrote some official correspondence. Went to office and wrote up some seed samples. At noon went to lunch at Ruby's with Mr. Ginn of the Yamato Seed Co.,

after lunch we went to the Colonization Bank where Mr. Ginn introduced us. That we might deposit some checks. We found the rate of exchange as high as in Tokyo and only deposited a small check. We found that before it could be drawn upon that they would have to refer it to

Yokohama and it would
take a week or ten days.
It took me about two
hours to accomplish
almost nothing.

After return to the office
we developed the motion
picture film taken at
the Nagayama Exp. Sta.
and on the way to
Asakigawa. 2

Mr. Yura informed me
that ~~Mr.~~ Haru, one
of the Directors of the
Yamato Seed Co. would
advance me 200 yen
while the bank was
looking up my check.

Mr. Raina advised
me in the morning

that he would like to
obtain some different
species of vetch to try
out at this farm. The
hairy and spring vetches
are the only two now
grown in Hokkaido.
They are used very much
for green manure.

The way to run
mailed official
postage

Tuesday - Sept. 17, 1929,

Sapporo, Japan

Saykhan Brook - & Dr. Abiko -

Kotoni - Saykhan not brook

Ostelaria spp.

Austrian winter grass

Left Sapporo at 8.45 A.M.

Arr. Kotoni at 9.00 A.M.

Left Kotoni at 12.06 P.M.

Arr. Sapporo at 12.19 P.M.

Care fore. (3rd C) Sapporo

& Kotoni return ^{interrupted} indirectly.

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Green manure -

In one large field which
had been sown the latter part
of August. This followed
wheat experiments. Generally
spring vetch is sown right
after wheat harvest and
then turned under for
green manure during

November or December, ^{Finland}
 7055 - R. Clover from Urmattola
 7056 - " " " Ekero Finland
 7057 " " " Glistaro "
 7058 " " " Järpajoki "
 59 " " " Bodom "
 60 " " " Kaikajoki "
 61 " " " Kokemäki "

In looking over the sylvan
 variety tests, the Ulyachii with
 its selection appears very
 promising for our northern
 and central corn belt states
 and no doubt should be
 adapted to Wisconsin,
 Iowa, and Michigan conditions.
 The stems are stiff and
 upright and the variety is
 very prolific here at Kotonie.
 Larger amounts of seed
 should be obtained of this

rarity, so that it can be
tried out in Ohio, Ill., and
Wisconsin, Mass., and Iowa
during the season of 1930.
Analysis should be made
for oil and protein of the
seed grown in Hokkaido.
The same variety should be
obtained from different
Hokkaido Exp. Sta. and the
seed analyzed for oil and
protein.

Wednesday - Sept. 18, 1929.

Left Sapporo	8.00 AM
Arr. Obihiro	3.56 PM
Car fare Sapporo to Obihiro $3\frac{1}{2}$	3.43
Exp. ticket	1.65

Rice harvest time
been begun in a small
way. In some sections
it was noted that they
were just reeling the
frames for curing the
rice while in others
considerable rice had
been cut.

As we came down
the line considerable
red clover was noted.

Coming into the
Kotachi valley we had
come into the bean
district. Very large

acres of soybeans, field beans and adzuki beans were noted leading up to Ubihiro. Adzuki beans and field beans seemed to predominate. In many cases the adzuki beans and field beans had been cut and placed in small shocks, only two or three fields of soybeans were noted to be harvested. For the most part soybeans were just beginning to turn yellow, while all the adzuki and field beans had lost their leaves or the leaves were all yellow.

Along the way in the valley two large apiaries were noted. One of them

evidently a traveling
one, for the man and his
wife had a large tent in
which they lived, in the
midst of the bee hives.

More large herds of
Holsteins were noted
today than on any
previous trip. At least
5 large herds were seen.
Very near Utikisso,
a very modern dairy
barn was seen. Near the
barn was a large modern
concrete silo and it
was being filled with
corn. I saw rather
a familiar northern
scene to see the corn
going through the

silage cutter and being
carried up to the silo.

We first stop at the
Shingokan Inn located
near the railroad station.

The rate is per day.

For supper we had.

1 Rice.

2 Tea.

3 Small vegetable melon which
had been filled with meat
loaf and boiled. It was
allowed to get cool and
then cut into slices
and a cream sauce
poured over. It was
served cold. Quite good.

4. Lotus root, bamboo shoots,
and fish sausage boiled
in sugar and soy sauce
water. Quite tender in
small pieces

5. Fresh spinach with shavings of the hard dried fish.
6. Raw fish - white. Salmon cut in a little roll and wrapped in scallions.  - Fry. Small amount of radish & horse radish.
7. Soy sauce
8. Rice soup with boiled cabbage in small pieces
9. Fish soup - mushroom slices and fish sausage.
10. Two kinds of pickled fish.
- 11 - Two slices of egg plant - dipped in soy sauce.

After supper Suya take

and I took a walk up
the street and found
at a store small packages
of buckwheat flour, adzuki
flour, tily bulb flour
and flour. These
are said to be used
in making soups.
Also saw some sugared
soy beans. Plants of
soy beans filled with pods
for green vegetable beans
were noted at all the
grocery stores.

At a few stores we
noted soy bean oil (from
T. Kyo firm) in half
gallon cans for salad
oil.

Thursday Sept. 19, 1924.

Utsunomiya - Tochigi Prefecture,
Tochigi Co. 250,000 Koku

Soil in this county not very
rich and climate not too
favorable.

In Tochigi Co. there are

2,500,000 acres of cultivated land

2,870,000 chō cultivated land

130,250 chō under cultivation

156,760 " not cultivated

Legumes of the cultivated land

Legumes occupy 60%

Grain except rice 17%

Rice paddy 7%

Root crops 6

Miscellaneous crops 11

String beans 1

Soybeans 2

Peaches 3

Another reason for growing

Soybeans in this co. is
that soil conditions are
most favorable for soybeans.
Volcanic ash soils seem
especially suitable for
legumes, and less fertilizers
are required. Cannot use
machinery on account of
economical conditions which
call for manual labor.
Soybeans require less
manual labor and fit
in best with climatic,
soil, and farming economical
conditions. In Sept. and
Oct. dry soil conditions prevail
during for harvesting
Soybeans stand around
cropping while other crops
have to be rotated. With
soybeans not necessary
to weed as with other
crops.

A farm family of four
handle 15 chos in
Tobkabi. A family
in Hobkaido handle
5 chos. A family of four
does all work by hand
except the plowing which
is done by horse & plow.
Soybeans fit in as
less labor is required,
and farmers in Thachin
handle 10-15 chos while
the average Hobkaido farm
family handle only 5
Chos.

In addition soybeans
offer in the threshed straw
a source of straw for
cows and horses which
saves the farmers from

buying or growing other
beans or feed.

Farmers use very few
any beans for home use.
All beans are grown
mostly for export. A few
make miso and some
are boiled. Most grade
left over from those for
export are used for
cattle feed.

Export soy beans are
divided into 5 grades.
1-5 grades are for
export. Anything that
cannot be classed in
these grades is used
for cattle feed.

Grades are made for export
while for soy sauce, miso
and other products, special
grades are made.

In this region climatic conditions are very suitable for soybeans as dry conditions prevail from now until late October and all forms crops can be exposed and cured on ground.

Cut with the sickle, left in ground for two weeks. Many plants are then bundled, carried off the ground and then beat out by hand. Most forms beat out with the flail.

In southern Japan the soybean plants are pulled when mature, left in field for 1 day, then

Griddled ~~deep~~ deep and
taken to form yard where
the pods are pulled off by running
through tooth arranged. Pods are
allowed to dry and are then
beaten by mallets or flail.

Time of planting May 5-10.

Harvesting - Sept. 15 - Oct 15.

Method of planting. Mark rows
with collister 17 in. apart.

People with bags of beans
plant by hand and cover
with feet. On large areas
after planting by hand.

The beans are covered with
bamboo weeder or rake

~~Beans~~ are planted 2 or
3 fin inches apart in
the row.

Cultivation - Begin to cultivate
15th of June and 1st of
July 1. Cultivation by
hand (hoe) and also

Storage - farmers - varieties given
Price by farmers

with horse and cultivators.

After July 1 bean plants
have become large so that
plants would be injured.

Soybean Products.

Maggi - Made in
France - Made from
animal products. Liquid
in small square bottles.

Fertilizers: Generally use
acid phosphate. Every
third & fourth yr. use
horse or cow manure
(4000 lb) (4000 lbs) to
1/4 acre. 3. to 4 tons (30-40 lbs)
to quarter of acre.

Time of harvesting: When
all leaves have fallen
harvested on station.
Farmers leave plant

in plant and fully mature
after cutting plants are
left in ground 10 days
or two weeks -

Prices: Farmers receive
6 yen for 16 karr. = 100 kin.
(kin = little over pound).

Shipping⁺ Selling: Farmers
sell to merchants in
town or agricultural
bureau for farmers. In
the latter case has been
found better for farmers.
as they receive better prices.
1922 - 636,849 Koken of
soybeans for Hokkaido. In
same year shipped to
main island 367,465 Koken
of soybeans (58% of crop
produced in Hokkaido was
exported). 48

Used - Kokubank
 Miso - 58600 Koku 9 20
~~Tofu~~
 Shoyu - 54,650 Koku 9 20
 For acid - 40650 Koku 6 20
 Tofu & others - 115,534 Koku 18
 Where shipped to
 14 20 to Fushiki - Northern
 12 20 to Nago Central
 12 20 to Aomori North
 12 20 to Tokyo
 8 20 Niigata, Sado Is., N. Cent
 5 20 Mei Sei Oil
 3 20 Saghalien Is.
 2 20 Yamagata
 2 20 Oshima
 1 20 Formosa
 1 20 Kobe
 1 20 Yokohama
 2 20 Uthoplaad

Soybean Products in Japan
1923.

Production 3,433,908 Koku
in Japan except Korea &
Formosa. Hokkaido
produced 17%. Iwato
produced 9%. Kagoshima
produced 5% -

Miyagi produced	5%
Nagano "	4%
Kumamoto "	4%
Aomori "	4%
Niigata "	4%
Fukushima "	3%
Ibaragi	5%
Saitama	5%
Chiba.	4%
Nagasaki	4%
Other provinces	28%

Osaka is the principal
storage shipping point.
The beans are stored in

bags like rice in
handmills.

Varieties grown.

Grown on farm two
colors - Black - ⁽¹⁾Yellow

Black:

Early Black - Sose

Middle season Black - Chuse

Black.

Yellow

Uyachi.

Isikarishiro.

Shirokotsunbu (White small ^{seed})

Akazaya. (Red pod)

Yoshioka (Large grain)

Kanoro (Small seed)

In diseases and
insects. The latter do
much more damage.
The bean pod moth

sometimes does more
than 40% damage.

Muscardine found in
small area on point near
Volcano Bay.

all varieties, $1\frac{1}{2}$ lb. each.

Three bulletins. ^{cultures & varieties} ~~uses~~.

Dr. Seijir Kawasaki.

Chief Dir. Kotachi Br. Exp. Sta.

of Hokkaido Agr. Exp. Sta.

Utsunomiji, Hokkaido, Japan

Synonym - variety test.

Shimoshirazu - Non Frost.

Fully mature. Br. hairs. Wh. & pl.
fls. Selecting for pure fl. color.

Very prolific; called non-frost
because it matures before frost.

Matures in 110 days.

Runs - 21 in. rows.

Plants 10 in. apart with

plants 3 to hill. Three

grains are planted to each
hill. 18 in 24 in high. This

is the earliest of varieties
grown

Yields in Tokachi - The farmer
obtained as high as 40
bushels per acre while the
average is 24 bns. per acre.

Tokachi soybeans have
larger content of protein
than Manchurian beans,
as Tokachi beans are
used for food while
Manchurian beans have
higher oil.

Oyachi #1 - grown most generally
with farmers through Tokachi
More than 70 % of varieties
grown.

Oyachi #1 - Special bred
Oyachi - original variety

*Oyachi #1 - 36 in. Takes the
manure very much. Runs
free & tip, an excellent
variety.

Oyachi #8

Rangoshi: Bred by station #6 -
white peris. very prolific. An
excellent variety.

Rangoshi - Original

Rangoshi #7 - earlier as in No. 6
than the original variety

Manchuria - Poturi #5 - Long
pointed leaf like #21079. Under
normal weather this variety
outyields all other varieties. Also
number of 4-seeded pods. Also
quite resistant to legume
pod with. Seed skin yellow.

#1245-63-62 - Main St. #1248

Indica: Large seed & pods.

Seed 1/2 grown. Very large
beany growth.

Hatahikari - Bred at Ashima
Br. Sta. #1237, large green
seed & be of ex. quality.

Very prolific. Taper falling.
Resutaru - Bred at Aburi
Exp. field #377, yellow seed.
Very prolific. Seed about full
green. Small green

Sayban #117-B - Koton #6000

Chuseihadaka - Middle
season non hair Koton #4926,

36 in. Large crop. Green
small. Resistant to bean
pod moth.

Kenashidaiju - Non hair
Koton #1508. 10-16 in. high
Earliest of non hair varieties
Note - Two summers are
growing the smooth varieties

Nasehadaka - Non Hair.

Kotani Bud # 64, 36 in.
high, good yielder. Looks
very promising.

Kaributo: Shuri Exp. Field
376. 46 in. high. Very prolific.
Big growth, very branching
very good.

Shiryuki-Tokachi # 1030. A
variety originally from Manchuria.
Shiryu - means 4 seeded pods.

Large grain. Leaves yellowing.

Kuroaya - Black pod. Kotani
6025 - Leaves somewhat.

Excellent growth. Small
grain, yellow seed.

Chusekurodaizyu - Middle

black large grain.

Tokachi # 1848. Erect, very
prolific. Mature

Kuroumae - (black bean)

Tokachi # 708 - Late about half
grown.

Chaseikurodaizyu - Tok. #4

Dark red leaves. Mature
Kurodaizyu - Tok. #286 - Leaves
just beginning to yellow. Very
good. Black seed

Kurumame Tok. #963 Black
seed - Leaves yellowing.

Shirashirazu Tok. #9

Non frost - very good early.

Shiro ——— Tok. #10.

Shiro ——— - original variety

Shiro ——— Tok. #11.

Shiro ——— " 12

Shiro ——— " 13

Adzuki beans.

Soseidairyu - ^{early} Earliest
variety. Most popular in
Hokkaido and one most
grown by farmers in Island

Sand-red.

Soseidairyo - Toch["] 4, red
early.

Soseidairyo - Toch["] 5 early

Soseidairyo - Panka["] 32 Early

Kotani ["] 37 - Cross between
(Mamba) (Furukiri)
round & wrinkled leaf.

Kotani ["] 38 - ^{early} Same cover
as ["] 37. Early

Dainagon - ^{early} white pods, Kotani ["] 6434

Dainagon - Toch. ["] 2036 - Late.

Kitami Sta["] 8 - med. late.

Mamba (Round leaf
black) ^{early} med.
Med. early. Toch. ["] 2035.

Dateazuki = Kotani 2189.
Late.

I-Taketaka - Kotani ["] 6426
Early - non mature.

grades of soybeans

1- Perfect in color, size, shape,
& free from foreign matter,

Amount of moisture

Free from insect injury,
The remaining four grades
have vary in above
characteristics.

Some time was spent
in looking over the
soybean increase plots.
It was found that the
station experts have
a hard time trying to
get the farmers to put
in practice some of
the successful experimental
work developed by the
station.

Two of the smooth

(non hair) varieties are
excellent varieties and
produce heavy yields
of seed and on account
of their leathery pods
are highly resistant to
the bean pod borer
which attacks the soy-
bean seed. The station has
not been able to get the
farmers to take hold of
these varieties and grow
them. It is claimed the
seed is too small. The
station is trying to
develop a larger seeded
smooth variety by
crossing with the
Uyachie which is
largely grown in the
Kotachi County.

The same prevails

with green manure
work. It is impossible
to get the farmers to
turn under crops.

In Tokachi province
no crops are being used
for green manure.

The station has a
plot of hardy alfalfa
obtained from the U.S.
This plot about $\frac{1}{8}$ acre
in size has been growing
for more than 9 years.
During the last four
years three good crops
have been cut each
year. At the present
time the third crop
is ready and is

a uniform thick stand
about 36 in high. The
alfalfa is grown by
farmers in this county.

We were invited to a
supper down town by
Dr. Kanasi and about
6 P.M. went to a
very nice restaurant in
Ubihiro. Went to an
upstairs room where we
had a dining table and
chairs.

We were first served
beer and roasted peas.
The following dinner as
served in course

- 1- Large slice of butter toast.
- 2- Soup.
- 3- Broiled slice of fish
- 4- Macaroni in *spade*
shaped shell. The macaroni

had small pieces of
chicken and ham and
some cheese. After mixing
these, the mixture was
placed on the shell and
roasted in oven. It was
a most delicious dish.

5. Chicken with
milk gravy. Asparagus.

6. Two thin slices of cold
ham with thinly
sliced cabbage.

7. Slices of watermelon
and slice of jelly of
different colors.

8- Tea with lemon - tea
very sweet - nearly
like syrup.

Arrangements were

made to take motion
pictures of methods of
planting soybeans
in Hokkaido.

Several pictures were
taken by Dorsett of
different plots of soybeans.
Especially pictures
showing the smooth
varieties and the Utyachi
variety which is so
generally grown in
Kotachi province.

In the afternoon it
sprinkled off and
on but cleared up at
night.

Taxi fare Aburatsubo to Sta

1 00

Friday, Sept. 20, 1929,

Utsunomiya, Hokkaido, clear and cool. The station is growing considerable Olyachin variety for seed. This seed is distributed to the Agricultural Societies of different prefectures. The Agr. Society grows this seed and then the society gives to the members of their society. The amount of seed given to the society depends on the number of members the society. The station gives about 3 lbs. to society. The society grows and increases this seed on their field. The society gives about 3 lbs. to their members who desire it. The societies have 2 or 3 agricultural

Engineers who look after the
Society's agr. problems such
as spraying, etc. Each village
has its society and in
addition to 1 or 2 engineers
depending on size of society
they have a clerk. The seed
is given the society by the
station without cost and in
turn the society gives the
seed to its members without
cost.

Fertilizer Test.

Nitrate of soda

Sulfide of potash

Acid phosphate

1- Check - no fertilizers

2- { Nitrate of soda - 20 lbs }
 { Potash - 15 lbs } per 1/4 acre
 { Phosphate - 20 lbs }

3. Nitrate soda } 20 " } per 1/4 acre
 Phosphate } 20 " }

4 - Nitrat Soda - 20 lb } $\frac{1}{4}$ acre
Potash - 15 lb }

This plot appears to be
ripening earlier than others
and not quite so branching.

5 - Potash - 15 lb } $\frac{1}{4}$ acre
Phosphate - 20 " }

Larger growth than 4 and
other plots, but not quite
so early as No. 4

6 - Check

In the past years fertilizing
tests have shown that the
best results were obtained
from the three fertilizers
and the next best results
from the Nitrate of soda
and the phosphate. In
the third, results without

the phosphate,

3 fertilizers	—	100 %
Soda-phosphate		98 %
Potash-phosphate		86 %
Soda & potash		66 %

Sapporo Lima developed by
Kotoni station, Matures here
and gives very good yields, ~~Food~~
A few grown in Tokachi county,

Rotation.

Northern French system.

- 1- Sugar beets
- 2- Wheat
- 3- Clover
- 4- F. lax.

German method

- 1- Beets
- 2- Barley
- 3- Potatoes
- 4- Wheat

Denmark -

- 1- Beets -

2 - Barley

3 - Clover

4 - Oats

United States - Illinois - (Chicago system)

1 - Beets

2 - Wheat

3 - Clover

4 - Corn

Illinois System

1 - Beets

2 - Wheat

3 - clover or soybeans

4 - Potatoes

Hobbs' method

1 - Beets

2 - Wheat

3 - Oats

4 - Soybeans

Hobbs' method

- 1 - Beets
- 2 - Barley
- 3 - Oats
- 4 - Soybeans

Hokkaido Method.

- 1 - Beets - fertilizers
- 2 - " - rock
- 3 - " - guano
- 4 - "

Hokkaido -

- 1 - Beets without
- 2 - " fertilizers
- 3 - "
- 4 - "

Spring season of all - May 12.

Where fertilizers is used
 fish scrap - per $\frac{1}{4}$ acre 50 lbs;
 chile soda 60 lbs per $\frac{1}{4}$ acre.
 Phosphate - 80 lbs per $\frac{1}{4}$ acre.

Blight resistant potatoes.
 Late skinless. Pepper variety
 introduced from Germany

shows most resistance.

Soybean juice or wine

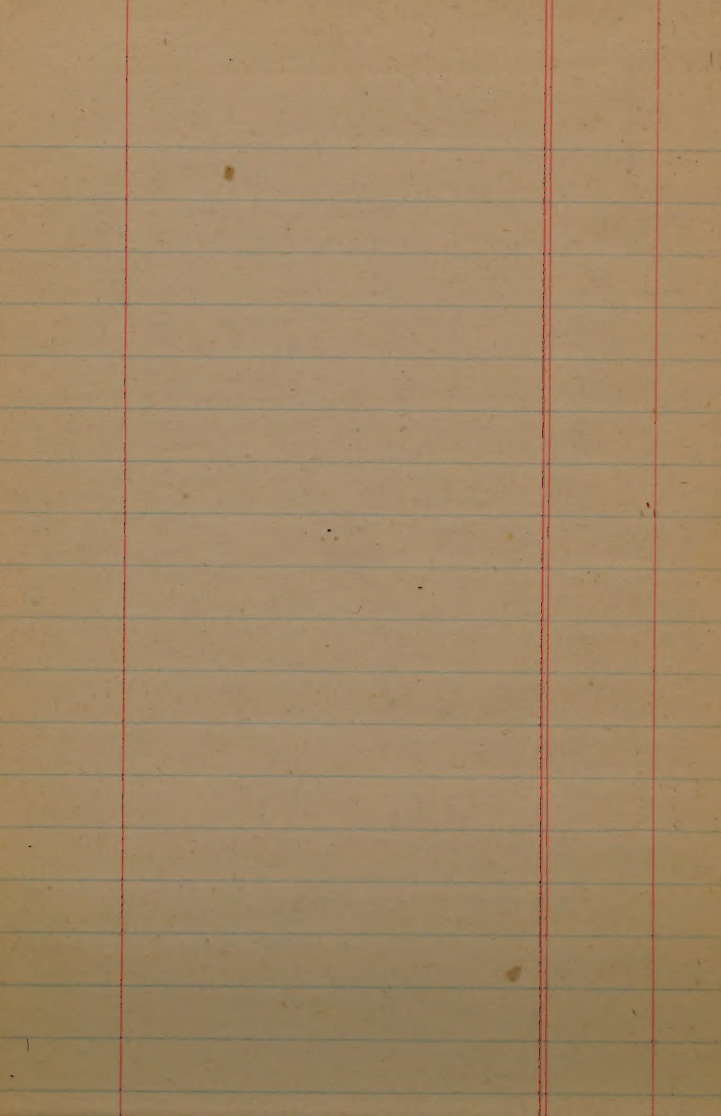
While attending an open air cooking school demonstration near the main building, I was attracted to a large basket (open work bamboo) containing large black soybeans. Upon inquiry it was found that they were making soybean juice or wine. This is a local product not made commercially but made only in the homes.

A bushel of black soybeans (or quantity desired) and twice the amount of water as of beans. The beans are boiled for about an hour.

The juice, a blackish purple
liquid is drained off. After
this is drunk as it is
with sugar added to suit
the taste of the drinker.

A small quantity of citric
acid is added. Where wine
is desired, more sugar is
added. The juice is then
placed in a warm room of
the house and allowed to
ferment. The product is then
treated as the material
for making grape or other
wines.

At the demonstration they
were cooking various vegetables,
making chicken rice, and
rice noodles.



Saturday, Sept. 21, 1929.

Went out to Kotachi Exp. Sta. about 9 a.m. Arrangements were made by the station people to give a demonstration of threshing systems with bamboo flails.

Grain ^(wheat) is sown in rows and sown May 9. Clover sown same time as grain. Take grain off. In October the clover is turned under. Then spring wheat is sown under the following May. Clover Casput Macrosporum Cladosporioides.

Clover and grain sown in 20 in. rows.

Flax and clover sown together in rows 20 in. apart. about May 9. Single plot of

clover for chick harvested
for 1 crop. Clover turned
under Oct. and spring
wheat sown early next
spring about 1st week of May

- 1-Field Peas alone
- 2-Peas & clover (between rows)
- 3-Common Vetch planted after
peas were harvested. (8/1)

4. Peas alone

1- Flax alone

2- Flax - clover between rows.

3- Clover alone

Green manure tests to find
out value of green manure
in comparison with
commercial fertilizers.

Crops tested. Red clover. Common
Vetch. Winter Vetch. Soybeans

Green manure varieties.

of soybeans are the black
and brown varieties

Rate of sowing - Green manures
Red clover - 14 kilos seed sown
1 hectare in rows 20 in
Common vetch - 90 kilos per
1 hectare
Sward vetch - 50 kilos per
1 hectare
Soybeans - 90 kilos per
1 hectare.

Time of planting - vetches
sown last of June - Soybeans
& clover sown frequently
middle of May, sown
between grain rows. Sown
also at same time of grain.

No mosaic found on soybeans
or adzuki beans in Hokkaido.
Mosaic, however, is found
on soybeans in the main
island.

Nematode found on soybeans
in Iwari. It is said to be
quite bad in this district
and apparently the same
species as on cougars and
soybeans in our southern
states.

Wilt is found on soybeans
in Hokkaido but very little
is found. Much wilt found
on soybeans in the main
island of Japan.

In some bean fields (field
beans) sclerotinia near very
bad and is one of the most
common diseases. It is
also found to affect soybeans
to a slight extent.

Lily fields near Utsunomiya. The
buds are cut when the plants
are 15 in. high which is
in July. Gasoline box of bulbs

in sandalwood contain about
100 mites which sell for 20 yen.

Passing through a soybean
field of a farmer, an early
variety of soybean, fully
mature was noted. This
variety, with greenish yellow
seed has been mature for at
least 2 weeks. Examining the
seed of many plants, it was
found affected by the legume-
pod moth. It is said by
Prof. Fujisaki Yoshio of the
Tokachi station that the Utyachi
variety is sometimes
damaged 40% by the larva
of this moth. Asked as to
what remedies were taken
by the station to combat this

moth, it was said that they advised planting the earliest varieties as late as possible or planting the smooth varieties which are highly resistant to this moth. The pods of the smooth varieties apparently are much more leathery or tougher than the pods of other varieties. Crosses are being tried between the Uzyachi and other standard varieties with the smooth varieties to develop strains resistant to the legume pod moth.

Motion picture was made of three girls and three boys flailing out seed of the non-frost variety of soybean. This was done on a large canvas and with bamboo

flails. The pods were rather tough from the heavy dew and did not flail out very easily.

The remainder of the morning and afternoon was given to a walk through the country to collect seeds and plants and see the crops most generally grown. The farms were devoted to a very great extent to growing field beans, more than soybeans in the section visited though many very good fields of soybeans were noted. About one-half of the field beans had been cut and placed

in large shocks with the butt end of the plants to the outside, and the shock covered with a conical shaped rice straw covering.

At ~~two~~ farm peas were not being threshed out on thick straw mats used as a threshing floor. Large piles of peas were spread over the mat and then a large heavy log roller pulled by a horse was driven around and around with the driver in the center of the threshing floor. The ~~large~~ pea straw was then forked and carried off and the lighter material on the peas swept off with brooms. Other loads of peas were then placed on

and the same process followed. This same method is also used with the threshing of soybeans. As yet no soybean threshing is going on but we saw several fields fully mature and in some fields the beans had been cut, and placed in shocks. In all cases it is until the bean plants are left until thoroughly mature and then cut with sickles or something like corn knives.

In the southern part of the main island (Hondo) the threshing of soybeans

is carried out in a different way. The plants are pulled and then left to cure on the ground for a day. Then the plants are carried to the farm yard and the pods stripped off by pulling the plants through a set of saw like blades. The ^{or stems} straw is sometimes used for cattle feed but most generally for fuel. The pods with seeds are allowed to cure for several days and then the seed is beaten out with mallets or flails. The pods are fed to cattle and horses. In curing the pods they are placed on mats out in the sun; after the seed is beaten out of the pods. The seed is placed

on mats and out in the
sun for several days until
cured.

Sunday, Sept. 22, 1929

Burr bar

50
28

Cool and clear.

Egg Farm - 15 chs

6 people - 4 working

15 chickens

3 cows

2 horses

Field beans - soybeans

13 Flocks

Every 13th give some variety
of crops. corn. Every year
one flock has three potatoes
and the other plots have
green manure crops. With
no crops - sugar beets & potatoes

Forage for cattle - use only
dry plants from legumes
as field peas, soybeans and
field beans.

About 2 chs are given &

grasses as timothy and corn

1. clover - example

1st year - clover in rows and
grain clover planted between rows

2. Clover - Harvester - after 1st

crop for hay - land put

out to another annual crop -

clover and clover again together in

summer between May 5 - 10th

Left Utsunomiya at 10.30 A.M.

for Taisho-mura - Arr. 11.10 A.M.

Our fare .50

Housing & Utsunomiya. .25

The Table-land farm
at Taisho-mura is conducted
to test out crops such as
field peas, clover, soybeans,
field beans, and other
similar crops in antici-
pation of the Kotochi valley
being given up to rice
paddies. The soil is of

of a sandy loam type
and gives very good
results with clover, beans,
vetches, soybeans. Much
larger yields of clover are
obtained than down at
the Kotachi station. The
soybeans were very well
fructified and should
give good yields. The Uynachi
and non-frost were
the varieties grown most.
Though there was a small
variety test, the med. early
smooth variety looked
very good. The Uynachi
and non-frost seemed
more or less affected
with the pod with. No

damage was noticed
from this insect on the
smooth variety.

In a fertilizer test with
stable manure, the plot
with 2400 lbs. to the acre
gave the largest growth
and would appear to give
the largest yield of seed
though it is apparently
a few days later in
maturity.

Other crops grown at
this station are field
beans, sugar beets, corn,
clover, vetch, flax, oats,
wheat, and garden
crops, and considerable
soybeans.

The exper. farm has
also supervision of
a farm across the

road which consists
of 15 cho. This is supposed
to be a model farm
for 6 people - 4 of whom
are working.

After looking over the
experiment and the
farm, we had lunch
and then botanized.
In the woods near the
farm, plants and seed
of the wild paeony were
found. Lily - of the
valley seed were found
in great abundance
all through the woods.
We could undoubtedly
have picked 3 or 4 bushels
of seed pods.

Lespedeza bicolor plants were noted all along the way but the seed was not fully mature. Seed of *Desmodium* sp. was still green but apparently strong enough to germinate.

Going along the road to Utsunomiya several tiny fields of the edible variety were noted.

Farmers were noted threshing out peas along the way. In most cases, they were being threshed out with a large log roller drawn by a horse. The woman stood in the center and guided the horse from the outside to the

center of the circle, in
a few cases, iron flails
were being used.

On two farms, millet
was noted being threshed
out. This was done by
taking bunches and
beating out on a slatted
table.

Along the roadside
large quantities of
the wild pink rose (seal
gathered yesterday) were
noted and the bushes
heavily loaded with
bright red seed pods.

Although a considerable
of soybean fields were
noted, field beans and

adulsi beans appeared
to predominate. Some
of the soybean fields,
apparently of the moni-
frost variety, were cut
and in small shocks.

Some fields of the Uyachi
and later varieties were
noted.

Motion picture was
taken of threshing out peas
with log roller drawn
by a horse. This is a very
common method in this
valley of threshing out
soybeans.

Arrived Ubitiro 6.15 P.M.

Monday, Sept. 23, 1929,

Cold & clear

Left Ubihiro

7.50 AM

Arr. Nokkenchi.

3.38 PM

RR fare Ubihiro to Nokkenchi 2.34 yen

Hotel bill at Ubihiro

from Wed. night ^{9/18} to Mon. morn. ^{9/23} 23,

Out of Ubihiro. some soy bean fields were noted but fields of adzuki and field beans were very extensive. No soy beans were noticed being cut. Field beans were being cut and many had been cut and placed in small round ricks to mature.

A few miles from Ikeda rice was being grown in paddies quite extensively, after leaving Ikeda and

going toward the northwest
we began to strike a region
where soybeans were
being very extensively
grown. Very large fields of
mature beans were seen.
all the beans mature were
apparently of the same
variety, brown pods and
tawny pubescence. The rows
were evidently about the
standard width of row used
on the island for soybeans
(20 in.). The plants were
from about 18 - 28 in. high
and were very well fruited.
It looked as though the fields
would at least yield ~~for~~ 25
or more bushels per acre.
The mature beans were
ready to harvest but in
only two cases did we

saw farmers cutting the
beans. The plants were
being cut with sickles
(like our corn knives). In
one field we saw three
men and a woman, while
in another field two men
and a woman.

Soybeans extended for
many miles. In one town
or village long warehouses
were noted. Undoubtedly
these are for storage of field
beans, field peas, soybeans
and rice.

The soybeans are grown for
food and are mostly shipped
to the main island.

Bush clover (*Lespedeza bicolor*)

was noted in abundance all along the way. In stretches for many miles, this clover, (the bushes from 4-6 feet) was as thick as the bamboo in other places, and covered fields, hillsides and mountain sides. At this time the foliage is turning yellow and seed maturing. The plants bear quite an abundance of seed.

Arriving at Nokeneslie about 4 P.M., after arranging for rooms at Kurobe Inn, we walked about town and in one of the Department stores found a new soybean product, peppermint flavored sugar-coated roasted soybeans. We thought this product much better than any of the

sugar coated soybeans
we have yet met with in
Japan. This product is
manufactured in
Nobkenohi.

We walked about the
foothills near the suburbs
and collected some
herbarium specimens and
seed. Plants of a wild
asparagus well filled with
seed along the main stem
were found in a thick
growth near the suburbs.

While near a school we
heard cheering which re-
minded me of a baseball
or football game at one.
We found later it was a
baseball game between

two schools. Later in the night the students celebrated their victory much as do the students at home, cheering, singing, and marching about the town.

Some most beautiful dahlias and asters of many colors were noted in the gardens about town.

Thursday, Sept. 24, 1929

Cold and clear.

Oyachi #1, Rankoshii. Non-hair,
Kamro. About here the
Rankoshii is the best yielding
and Oyachi #1, next.

Season here a little late for
Oyachi #1, Oyachi, and Rankoshii
as frost often catches them.
Rankoshii most popular
and best yielding variety.

This district has rice
as the principal crop. Grains
near
and millet grown very
extensively. Soybeans not
grown very extensively but
grown principally for family
use. Those produced above
family needs are sold to
merchants. No products

extensively made by farmers,
being used for cooling
purposes in the home.

Soybeans less than 30%
of crop in this section.
Farmers make no special
provision for planting soy-
beans. The beans are planted
on land not in use, in rows
between peppermint and
along rice paddies.

Green peas are grown to quite
an extent. In this section
rice growing prevails so
farms are less than half
size of those in Tokachi
region.

Acreage - rice	15000 Cho.
" - Peas, beans	12000 "
" - Adzuki beans	2000 "
" Soybeans	4000 "
" Peppermint	11000 "

Kan = 10 lbs.

Four real Japanese varieties,
2 English varieties, and two
American varieties.

Japanese variety is the
Kitamiakamaru most
grown among the farmers.

Acreage-peppermint 11000 ch
Dry wt-peppermint 60-70 Kan
and even 100 Kan. to $\frac{1}{4}$ of
an acre. From this dry
wt. 5-6 kin (1 $\frac{1}{4}$ lb) of oil
oil brings to 5-10 yen
per 1 kin.

With farmers 1 kin
(2 lbs) is used as standard
weight.

Japanese varieties - Peppermint
1. { Akayama Akamaru
(name of prefecture)

2. Yamagata Akamaru
(name of prefecture)
3. Baroshiroki Akamaru
(long word - white hairy on stems)
4. Kitami Akamaru

Baro also a Iru village
where this variety, Baro-
shiroki is extensively grown.
American varieties.

1. Spearmint.
 2. Piperita Viridis
- English Varieties.
1. White Peppermint
 2. Black Peppermint.

Best American and
English varieties not as
good oil as Japanese varieties
which may be due to soil or
climatic conditions.

Peppermint is best to
harvest or is harvested in
Kitami district right.

after flood from Sept. 1 -
15. Peppermint is some-
times affected by blight and
when this disease appears
the crop is harvested at
once regardless of stage of
growth. Blight is a fungus
growth. The beds of peppermint
are kept until they die
out. Sometimes bed 10
to 15 years.

The blight of peppermint
is *Peridermium menthae*.

The peppermint plantings
are made from roots
as seed is not fertile.

Insects of two beetle
kinds affect peppermint
plants. One is like the
melon beetle.

In fertilizing peppermint
the farmers use 300 kams per
 $\frac{1}{4}$ acre horse or cow manure.

Station uses 5 ^{bag of manure} kams per
 $\frac{1}{4}$ acre and $7\frac{1}{2}$ kam of
acid phosphate. The plant
is about 3 feet high.

After the plants are cut
they are left on the racks
to cure for two weeks. About
same method as rice but
heavy straw is placed on
top of rack to keep out dew.
Best method is to cure
in shade.

Roots are planted in fall
and spring but fall planting
is the best.

Fertilizers - Manure is
spread in fall after the
crop is cut. In the spring
before growth starts the

soybean oil meal and
acid phosphates are spread.

The first year the roots
are planted 15-20 in.
apart.

Yokohama - 5.73 yen for
1 pint of peppermint oil.

Rangoshi is the best yielding
variety at the station but
is caught by frost sometimes.

Soybean insects & diseases.

The legume pod with
is not very prevalent in
this prefecture. No nearly
so bad here as in Sapporo
and Tokachi regions.

Very little disease affects
the plants in this region.
In this region even
rice is very little affected

by diseases or insects.

Fertilizer Soybean test
check

acid phosphate

Potassium "

Bone meal

Rice Bran

Araruna Phosphate

Phosphate

check

For pepper mint blight - two
applications of Bordeaux mixture
1st in July. 2nd in Aug. These
seem to hold blight in check.
The blight appears again in
the fall.

The Barashiroki ^{variety} can be cropped
twice a year and is the only
one that can be cropped twice

Peppermint grown first
in Kitami in 1885. People
tested wild plant first

and got good oil. Plants
brought from Yamagata
and Nagayama counties
but did not succeed at first
as well as wild peppermint.
The farmers distill the oil
themselves from peppermint.
This is sold to merchants
in the villages and then is
shipped to Yokohama. The
price varies because of the
various grades of oil offered
by the farmers who do not have
a uniform method of
distilling.

The saykum work at the
station consists of the
variety tests, seed production
fields of Uryachi, non-frost
~~and~~ the smooth variety.

and the Rangoshi. All the sugarcans are doing exceptionally well this year giving a good growth and well podded. Fertilizer tests are conducted with different fertilizers and with the three principal fertilizers - Nitrate of Soda, Potash, and phosphate. No noticeable differences were noted in the plots.

As this is a rice station numerous experiments are being conducted with rice such as variety tests, fertilizer tests, irrigation tests (turning water on at night and turning on during the day. Also much work is being

carried on with pepper-
mint. Four Japanese,
two English and two
American varieties are
being grown. The Japanese
varieties spread underground
while the English and
American varieties
spread on the ground
giving a very thick
mat on the ground. Con-
siderable blight exists
in the plots and some
work is being done to
combat this disease.
Puccinia mentha. No
much headway is being
made beyond the results
obtained by spraying
with Bordeaux in July.

and again in August.

A fair sized apple orchard was noted - well fruited and good looking apples. Worms were however quite bad in them. Various tests are being conducted with the different kinds of vegetables. A small area of tobacco is being grown and apparently has given a very good growth.

Near the apple orchard numerous varieties of grapes are being tried out. The bunches were large and filled with large berries which do not have the flavor of our best grapes.

We were taken to the

7. P.M. - Nikoro-50m

Peppermint distilling house where the experimental work is being carried on. Several kinds of stills are being used. The camphor still which is used in Formosa has given the best results but is too expensive for the farmer in this district for he has a very simple inexpensive still.

We were given roots of the four Japanese varieties of peppermint and also promised seed of the different varieties of soybeans grown at the station.

Only a few plants of red clover were noticed on the

station grounds. But little
green manure was being
carried. Some spring vetch
and soybeans were being
used. On our trip through
afternoon covering more
than 12 miles in the country
to Nikoro in the heart of the
peppermint district no more
than a dozen red clover plants
were noticed.

The bus was crisscrossed so we
ride in a truck which makes
hourly trips through to Nikoro
about any hour. The country
we went through was quite
mountainous and in the
valleys and partly up the
hillside there was much
farming with peppermint
predominating. All along
in the valley and on the

hillsides racks of drying
peppermint were seen. The
racks varied in length from
100 to 300 feet in length. The
branches of peppermint was
strung along on a coarse rope
with either 5 or 6 sections. All
peppermint had been cut.

Some acorns, field and oaks
were observed and some
sagebrush but this entire
region was a peppermint
section.

While on a hillside we observed
a young Japanese farmer burning
the heads off of bundles of
barley. He said this burning
also got rid of the aversatory
beards. The heads were in a
pile while the remainder of the
bundle was thrown to one side
and allowed to burn off. The
ashes were scattered about the

land.

Walking over the hills we hit the road to Nekkenstie and botanized along the way. Several things both plants and seed were collected.

Walked until about sundown awaiting bus or truck to town and about 6, truck loaded with bags of beans overtook us and we rode until stopped by flat tire. Evening very clear and cold.

After fixing tire, we arrived in Nekkenstie about 7.00 P.M.

3 boxes sugar-coated beans

1 50

Wednesday Sept. 25, 1929,

Left Nekkenshi 747 A.M.

R.R. from Nekkenshi to
Sagawa - 3rd C ¥ 4 80

Cold and clear. Arose early
to catch train at 7.47 A.M.

Dinner bill for two days ¥ 10 00

Going out of Nekkenshi we
went through rather an
extensive rice area though
on hillides peppermint
growing was carried on.

In the valleys in the more
hilly sections beyond the
rice growing section considerable
peppermint growing was
carried on. In this section
the plants were being cured
in large ^{open} barns or sheds.

About half an hour's ride
out of Nekkenshi red clover

was noticed in fair abundance
along the railroad, and
along the roads and edges
of rice paddies.

We went through rather
mountainous and hilly
country where but little farming
was being carried on. Much
reforestation had taken place.
It was noticed that between
Nokkushi and Mayoro ^{there was} a very
considerable rice growing.
Many fields of soybeans and
adzuki beans were noted.
There was evidence of heavy
frost all along the line
between these points. In
many cases much of the
rice has been caught before
fully mature. That the
frost was heavy was shown

by the soybean which stand
much first but in many
cases almost all the leaves
had been badly frosted. In
other cases only the top
leaves. Adzuki beans were
badly hit and in many
cases the adzuki plants
were pulled and bunched
in shocks like soybeans or
were being pulled. In placing
adzuki in shocks the plants
are placed with the roots
at the tops like rice bundles.
The section between Nohkushu
and Nagoya did not grow
many soybeans. In some
sections ~~soybeans~~ were
grown along the edges of
the rice paddies but this
was not very generally
practiced for we would go

through long distances where
no soybeans were planted.
Then we would come to a
section where nearly all
the paddies had soybeans
along the edges.

Beans were not grown as
extensively as in the Tokachi
district. Beans were all
pulled and placed in the
ricks with the roots outward.
Beans are placed to cure in
cylindrical piles about
6-10 feet high much like
our peanuts in the southern
states.

On the hillsides, we
noticed farmers burning
barley heads. If the straw
as we noted near Nikoro
yesterday afternoon. A

picture was taken of this practice.

we changed trains at Nagoya for Sapporo, and had about an hour's wait. Just as we pulled into Nagoya it began to rain and rained more or less until we reached Asahigawa. About two weeks ago on our way to Sapporo over this line the farmers were putting up poles on which to cure the rice and in a few cases were beginning to cut. To-day considerable if the rice had been cut and placed on the frames.

From Nagoya to Asahigawa there were evidences of heavy frost. Some rice had been affected but not as much as east of Nagoya.

The soybeans were also
less affected but in a few
cases they were badly hit.
In many cases the soybean
plants along the paddies
were fully mature.

Became too dark to see
after leaving Asahigawa so
Suyetake translated the
Kotoni Equista Bull. on smooth
varieties of soybeans.

Arr. Sapporo, 920 P.M.

Thursday, Sept. 26, 1924

Cool and clear. Went to
office in the morning.
Worked on introduction
cards of seed and plants
collected on recent trip.
Akao had a talk with
Mr. Gure of Yamato Seed
Co. with regard to crop
conditions in Hokkaido.
After lunch came back
to office and developed
section picture April
26 of soybean scene
taken in Tobachi prefecture.
The first scene that of
showing soybeans dropped
in row, was somewhat
fogged. The other scenes
were very good and should
be excellent for a movie

red in Japan.

After fixing up the movie
film helped in the
putting of bulbs, cuttings
and roots recently
collected for shipment to
Washington.

Friday, Sept. 27, 1929

Cool and clear.

Left Sapporo 8.50 A.M.

Ar. Kotoni 9.02 A.M.

Left Kotoni 12.08 P.M.

Ar. Sapporo 12.20 P.M.

Conference with Sapporo

at Kotoni (interpretation) 32

Called on Dr. Abiko with regard to our recent trip to Kotachi and Kitami provinces. Also gave him a list of seed and material desired from the Kotoni station.

Promised to send Dr. Abiko small amount of seed of all our varieties of soybeans, and also bulletins on soybeans. Dr. Abiko was very much

interested in our Tareco
variety of soybeans. He
advised that the nematodes
prevailed to some extent
along the southeastern
coast bordering on
Volcano bay. Two species
of nematodes are found,
Heterodera radicicola and
Heterodera Schachtii. The
latter is said to do more
damage to soybeans
than the former. Very few
crops are grown in
Hokkaido as it is rather
poor with and better
results are obtained with
field peas, field beans,
adzuki beans, and soybeans.

After our short visit
with Dr. Abiko, he called

in Dr. Satomi Kuwayama,
Entomologist of the Kotoni
Station, Dr. Kuwayama
has written several Bulletins
on the insects pests of the
crops of Hokkaido and is
well informed on insects
of Japan.

1- The Principal Insect Pests
of the Soybean in Hokkaido,
Bul. # 39.

Agri. Expt. Sta. Kotoni, Sapporo, Japan
Pub. by Station, Feb. 1926

Spent rather a profitable
hour in Dr. Kuwayama's
laboratory looking over
publications on soybean
insect pests and in
looking over the specimen
cases containing soybean

insect pests. Dr. Kuwayama
promised to obtain the
bulletins on soybean
pests in Japan.

He then took us out to
his experimental plots
where we had a chance to
observe damage done by
the legume pod moth,"
"Dr.

Kuwayama published
an abstract in a Japanese
scientific journal giving
the full history of this
insect and has promised
me a copy.

The bean pod moth was
found in abundance in
the yellow bean plots and
had caused much damage
to the seed. Different stages
of the larva were found

and in the green and
mature beans. The moth
lays the egg in the suture
of the pods. The larva hatches
and feeds on the beans. At
first the larva is nearly
white and has a black head.
As it nears maturity, it
changes to an orange color
cuts through the pod, and
drops to the ground and
buries in until the following
summer. There is but one
brood a year.

The bean pod larva appears
to affect all varieties to
more or less extent, though
there appears to be some
little variation in damage
with the different varieties.

The smooth or pole-hair varieties seem to but little affected by the pod borer and are recommended in those soybean sections where the pod borer does considerable damage. In examining the plots of smooth varieties no evidence of pod borer injury was found.

After our visit with Dr. Kuwayama, we visited the Soybean variety plots. The Uryachi variety is fully mature, and is heavily loaded with pods. This variety looks as though it might be a valuable one for our northern corn belt conditions. The station is doing some selection work with this variety. The early smooth

variety is quite parthific and
much better than any smooth
sort we have had. The late
smooth sort makes a good
growth but is not very prolific
except plants at end of plots.
The rows are 20 in. apart and
it may ^{be} that a wider row
would give better results.

All of the varieties in the test
look as though they might
be of promise in the states.

The saybun green manure
plots were next visited. The
varieties in this test are
for the most part rather
late, two of them just coming
into bloom.

A short stop was made

at the rice experiment
where the variety plots were
being cut and put on racks.

Japanese women laborers in
the plots were counting stalks
and calling ~~to~~ the numbers
to the experts.

Returned to office in the
afternoon and developed
motion picture film of
sugarcane scenes taken on
recent trip.

Saturday, Sept. 28, 1929.

Car fare & Kotenri & return .16

Clouds clear.

Left Sapporo 8:55 AM

Arr. Kotenri 9:03 AM

Left Kotenri 1:00 PM

Arr. Sapporo 2:30 PM

Met the entomologist
Dr. Kuwayama, who took us
us to the experimental
plots to collect material
for taking movies of the
the pod borer larvae and
the clover worm.

Dr. _____ aided us
in every possible to obtain
pictures of clover worm
feeding on pods and leaves,
pod borer working on seed
in pods,

After taking pictures
of insects, we went to the

some other variety but when
photos were taken off the
Uyachi variety, which is
fully mature and looks
to be a very good variety.

Pictures were also taken of
the early and late Burvith
varieties along with a hairy
variety. Photo was also taken
of a portion of the experiment
station.

We then went to Kotani
where we had lunch of a
bowl of Chinese noodles. No
train being due for some
time, we walked to Soem
where we got a street car
for Suwayama arriving about
2 P.M.

Then went to office
where we developed the
motion picture film.

Sunday, Sept. 29, 1929.

Left Sagers. — 8.00 AM.
Car fare to Shiroan and
return from Sagers (3rd) actual ¥ 4 08
" " " " ¥ 4 08
" " " " " " ¥ 2 04

Passing out of
we came to rather an ex-
tensive rice growing section.
Rice was being cut all along
the way. Rice was also seen
growing in little valleys
and pockets. The scenery
along the way was very
beautiful. Evidence of a heavy
frost was seen in the various
crops. Brilliant shades of
yellow and red on different
trees and shrubs were noted.
The maples were especially
beautiful. Some of the tall

traces carried from green to various shades of red. Some maple trees were of a deep red.

Arr. Numanohata at 10.25 A.M. where we changed trains from the private owned line to the government owned line.

Left Numanohata at 11.00 A.M. and arrived at Shiraxi at 11.53. About Numanohata and above the edge of the land and vegetation is that of the seacoast. The soil is quite sandy and the land low and swampy in many places.

Red clover was noticed all along the way until the low sandy region was reached. The plants were vigorous looking and the first crop was fully ripe and had seeded quite abundantly. The second crop

had made a very good growth
and the plants were quite
healthy looking.

We arrived at Shiraoi at
11.55 A.M. Learning of the
Ainu village we went by the
main road of the village and
found the Ainu village on
the outskirts of Shiraoi. The
Ainu village consists of 100
grass houses and has 500
inhabitants. On the way
through, an old Ainu with
long flowing beard met us
and conducted us to his
home. We learned that he
is from a long line of Ainu
chieftains and is now 80
years old. On arriving in
the yard of his home, long

were placed
straw mats on the floor by
two women in his home. We
were invited in the house
and had to take off our shoes.
That the house was an old
one was shown by the straw
roof and poles in the upper
part which were black
and crusted with smoke
as there was no outlet for
the fire in the fire box in the
center of the floor.

We were shown the relics
of which the old man was
very proud. There were
three or four old swords
which looked quite old. There
were also large round
cylindrical boxes which
contained the bowls and
other ceremonial objects
used in connection with

The bear killing ceremony.
The old gentleman went
through the ceremony that
of offering sake and vegetables
to their god and then par-
taking of each himself. The
offering is made to the
bear which represents the
spirit of the Ainu God,

Two Ainu women were
called in during the ceremony
and donned certain robes
which must be used

during the ceremony. The
old Ainu changed robes
and advised these robes
were necessary to conduct
the ceremony. After the
ceremony, the Ainu man
who had also put on

a ceremonial head piece
and the women went out-
side for us to take their
picture. After the picture
taking money was given.
Then and we proceeded
through the village.

at one house, in the yard
were two cages made of
poles bound together in
which were two partly
grown bears which were
being fed for the bear
festival or ceremony to be
held next March. Margaret
approached rather close to
one of the cages and the
young bear suddenly reached
out a paw and hooked
a claw in the string of a
package she was holding.
Quite luckily the string

was paper and broke easily. The man of the house and the woman (with the bluish black about her lips like a heavy mustache) took us to the back of the house where on a rack were at least two bear skulls. The man pointed to them with pride and undoubtedly was an Aimer hunter.

In the gardens about the Aimer houses which were constructed of reed, about the same vegetables as grown in the ordinary garden, such as radishes, cabbage, beans, corn, Irish

potatoes, turnips, lilies, the
corn is a mixture and
the ears in pairs for hanging
up to dry had bluish
black, yellow, red, and
various ^{other} shades of red and
blue grains.

We walked about through
the Ainu village, and saw
the present chief's house.
We also ^{saw} many Ainu women
nearly all of whom had
the bluish black painted
mustache.

We went to the seashore
as the village is located
along the near the shore
and saw the Pacific. Near
the shore they were making
fish oil. The fish, about
6-8 in long were being
drummed in large

kettles and boiled. After being
boiled they were placed in
in large screw presses and
put under considerable
pressure, giving oil and
press cake which was broken
into pieces and scattered
out on mats to dry. This
material was used for
fertilizing purposes.

After going through
the Ainu village again
we went up to the Japanese
part of the village.

Red clover was noticed
in small patches along
the roadside and much
white clover. The red clover
was not especially abundant
Seed was gathered of both

clovers. The red clover plants, 2nd growth were vigorous healthy looking plants. The white clover plants had rather long runners.

Shiraoi on the Pacific is quite a fishing place and the salmon forms an important part of the Ainu's diet.

On our way down in the morning, we had a most excellent view of Mount Komagatake, the volcano which became an active the forepart of June, 1929. The mount was in view until a short distance this side of Shiraoi. The volcano came into view shortly after leaving

Nunobiki. Smoke
could be plainly seen coming
from the newly formed
crater.

Many of the Shirai stores
had Ainu wood carved
articles for sale but better
selections can be made in
Sapporo. A small supply of
Ainu ^{carved} wood articles were
sold at the house of the old
Ainu we visited.

We left on the 5.12 P.M.
train and caught the 6.25
P.M. train (private line) at
Nunobiki for Sapporo
where we arrived at
9.10 P.M.

Monday, Sept. 30, 1929.

Cloudy and cool, in the morning went to office and worked on writing up data on collections made yesterday. Also wrote up data on the city bulbs of 35 varieties received from the local tiff dealer, worked on my brown notes during the evening.

Tuesday. Oct. 1. 1929

Cold and clear.

Left Sapporo 8.50 AM.

Ar. Kotenoi 9.02 AM.

Lv. " 12.08 P.M.

Ar. Sapporo 12.20 P.M.

Soybean insects in Hokkaido.

Soybean Pods and seeds.

1- Pod borer moth-larvae - worst
in Hokkaido but not bad in
Hondo - just a limited area
in Yamaguchi.

2. Clover worm eats holes in
pods (*Chloridea dipsacea*).
Occurs in Hondo, Chosen,
& Hokkaido. Does most damage
in Hokkaido both to leaves
and pods but no serious
injury reported in Hondo
and Chosen. Occurs also
in China and Europe

3. In Honda Thiodia
azukiwora, affects pods and
sides of soybean and adzuki
beans to some extent, Much
more injurious than the
brood borer in Honda. The
larva affects pod & root like
the Horkhaides pod borer.
4. In Gifu and Yamashi
prefectures the "Asphondylia
sp. (Gall midge)" larva
is worst pest. The larvae
eats the young's pods
and prevents growth.
5. In Honda there are
many different species
(sucking insects) which
do injury to stems,
leaves, and pods.

Coptosoma punctissimum
is the worst of these
sucking insects on

leaves, stems, and pods.

Especially occurs in Saitama
Yamanashi prefectures in
Honshu, and Kagoshima
prefecture in Kishi Is.

Riptortus clavatus is
another sucking insect
does much damage in
Honshu. First sucks juice
from stems and then
transfers to pods, taking
the juice and preventing
pod growth.

Soybean Leaf Feeders.

1. *Anomara rufocarpia* is
a serious leaf feeder in
many districts, more so
than clover worm. In

- Hondo this is worst leaf eating insect of soy beans. The beetle feeds on the leaves.
- 2- *Epicantha gorhami* - a species of blister beetle. Beetle feeds on leaves. Occurs in Tokyo district, Saitama prefecture.
3. In northern ^{eastern} part of Hondo (Iwate, Akita, and Aomori prefectures) *Eugnathus distinctus*, a beetle does serious damage to the soy bean leaves. It does not occur in Hokkaido.
4. In Hokkaido one of the most serious leaf feeders - both larva and beetle - is *Superodes discrepans*. Also affects seriously sugar beet, clover, peppermint, beans and chrysanthemum.

Also feeds on corn and
rice. Occurs in Ukyama
prefecture, Honshu, very
seriously. In Kitami,
Hokkaido, it is a serious
pest of pepper mint.

About 90 species of
insects affect the soybean
plant in Japan. In
Hokkaido about 30 or
more species affect the
soybean. Of these 90
species only small 20
affect seriously the soy-
bean plant. From 10-20
species affect the soybean
plant seriously.

Send F.B. 973

Dr. Satoru Kuwayama
Kitami Exp. Sta.

Kotoni. Hokkaido. Japan.

Leaf hoppers do not affect soybean plants in Hokkaido and Hondo. They do however affect other crops.

Thrips do not do very serious damage to the soybean flowers (pollen) in Japan according to Dr. Kuwayama. (Kotoni).

Thrips - Liothrips glycinola occurs in Hokkaido.

Euthrips glycinis occurs in Hondo and only known in Niigata prefecture in Hondo.

Legume-pod moth - Etella zinckerella schisticolor - occurs in Karafuto (Saghalin), Hokkaido and Hondo.

Record of injury to soy-bean is only in Tokyo district. No other record of injury by this insect to soybean in Japan.

Motion pictures were taken of the work of the pod borer moth taken from the experimental plots of the Entomology Dept. of the Koton Station. We were fortunate enough to find a pod with the full grown larva just emerging from a hole in the pod. When reaching full development the larva bores a hole through the pod, drops to the ground and then burrows in the soil where it remains.

until the next season.

After taking 52 feet of motion film we looked over the experimental plots.

On one of the red clover seed production plots, the second growth - 24-36 in., high was being cut for seed to obtain seed yield data.

Returned to Sapporo at 12.20 P.M. and went at once to the Sapporo Botanic Garden to see about the seed of various plants which they promised us. As Mr.

was out at lunch we were unable to see him but found that the seed was only partly ready and that they would send those to us for shipment.

After lunch returned to
office and worked on
putting up parcels (9)
of lily bulbs and sent
for sending to the Dept.

As evening we were
invited to a seedsmen's
banquet where we met
about twenty some of the
seedsmen and some
from the Botanic Garden.

We went first to a
room in the
Building erected some
years ago as a memorial
building to the Emperor
Meiji who visited Hokkaido
in the room the chair-
man gave a short talk
and then Dorsett and

myself were called upon
to give short talks regarding
our impressions of
Hokkaido which Mr.
Inuyake translated into
Japanese. After our
talks we were taken
to the dining room and
were served the following
dinner -

- 1 - Cream soup - with crotons
- 2 - Fried salmon with sauce
and boiled potato.
- 3 - Roast duck with gravy.
fried seafood
- 4 - Fried steak with gravy,
scalloped potatoes, spinach.
- 5 - Cup of red, white, and
blue jelly.
- 6 - Fruit, Pears and
young Lady apples
7. Coffee.

The young lady apples
were of a good color and
the best quality of any
I have tasted in Japan.

After our dinner we
went to the room we
were first in, and had
about an hour of social
talk. We were asked
many questions con-
cerning agricultural
practices and the educa-
tion's customs ~~into~~ the
U.S. They especially
desired information
as to whether or not the
government aided the
medium in a
financial way, and
also the farmers. They
also wanted to know

if one with a new variety
was protected by law
like one with a patent.

They were also con-
cerned with the
relation between farmers
and seedsmen.

We adjourned about
10. P.M. after one of
the most enjoyable
evenings we have
had in Japan.

The evening outside
was quite cold and
an overcoat felt
very good.

Wednesday, Oct. 2, 1924,

Cost and clear. In the morning worked on report and letter to Clabey concerning our Hobkaido trips. Went to office and wrote notes and had long talk with Mr. Yuen and Mr. Hanna of the Yamato Seed Co. concerning agricultural conditions in Hobkaido.

Considerable corn is imported by the Yamato Seed Co. from the states. The varieties are of the flint type. Silage is used by the farmers with dairies.

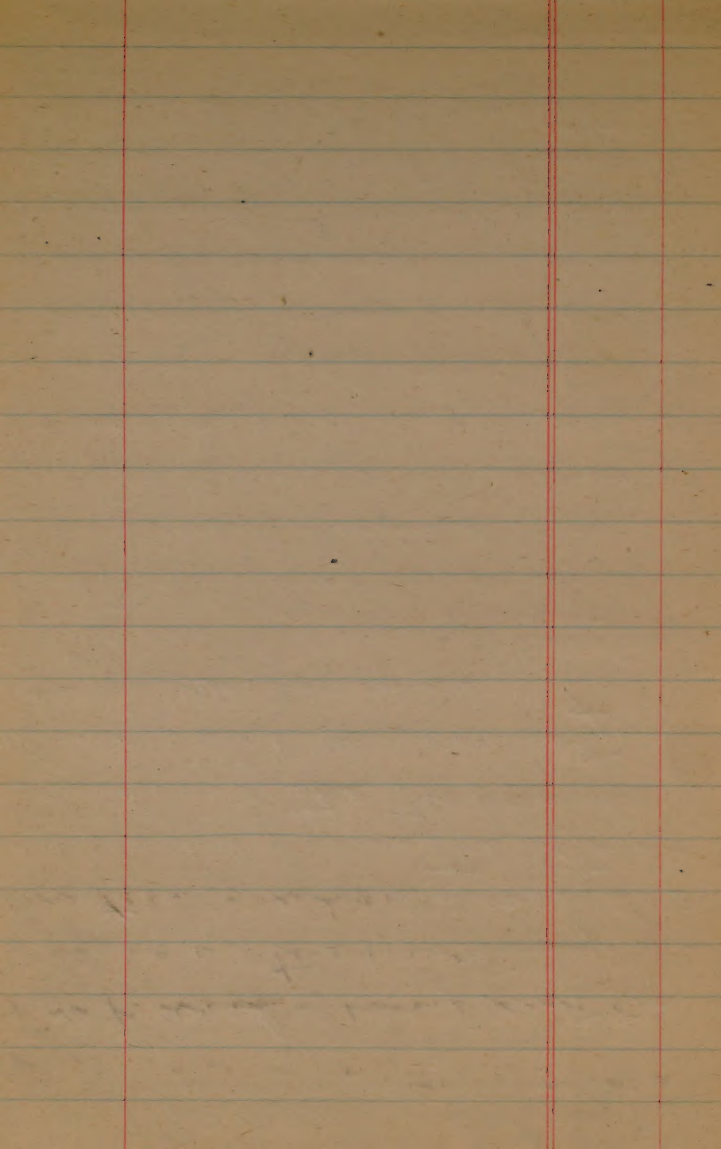
Very little alfalfa is

grown. The principal
forage crops used are
red clover and timothy,
red clover and orchard
grass, red clover. In
the wet places redtop
is used.

Red clover seed is
produced to some extent
in Hokkaido. It is
produced near Kuri-
yama, Sarashi Co., and
Yuni, Yubari Co. A little
seed is also produced
near Sapporo but for
the most part near the
above two places.

The present plan of
the government is to
increase the cattle and
dairy industry in
Hokkaido to more

than 500,000 head. At
the present time there
are less than 50,000 head
in Holland.



Thursday, Oct. 3, 1929

Cold and clear. Went to
office in the morning.
Wrote up seed samples
received from the Botanic
Garden of the Hokkaido
Imperial University,
Sapporo, Japan.

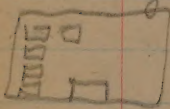
Visited a sugared bean
factory where they put up
5 different flavored sugar
coated beans - white plain,
banana, gerilla, peppermint

We were taken in the room
where the sugared beans are
produced. Greenish yellow
beans are used because they
are said to be of sweeter
taste.

The beans are first soaked

for one-half day. After
draining for a half hour
the beans are put in a
roaster like a corn popper.
This roaster is about 30 in
wide, 42 in. long, and 8 in
deep. The sides are sheet
iron and the top and bottom
are thick wire. This is over
an open fire  and
arranged so that it is
juggled back and forth over
the fire by power. The soaked
beans are roasted for an
hour over a very slow fire.
After roasting the beans
when warm or hot are
placed in a kettle of hot
sugar syrup. After being
placed they are at once
taken out and placed
in a mixer. Cooks

like a bread mixer, and
holds about one peck. Flour
is scattered over the beans
and after becoming thoroughly
mixed the beans are
placed in small boxes
with mesh bottom in
a large brick oven where



They are dried,
after becoming dry
the beans are again placed
in the syrup and the
same procedure repeated.
This is sometimes done
three times in order to
have the beans properly
sugared.

Sugared beans are
called "Asahikawa"

This sugared beans were
made first at Asahikawa

about 25 years ago, at first were just plain sugared beans. Since then additions have been made toward improvement of product. From 1920-1923 was maximum popularity of using sugared beans. Since then the popularity has decreased and people are turning to other things. Improvement is gradually made in adding different flavors. This house makes from 5-8 tons sugared beans per year and makes five different flavoured sugared beans.

Sugared beans were first made in Hokkaido and then spread to main island,

Store No. 2.

At another store the man said the sugared and scoured coated beans were first made on the main island about ^{30^{or 35}} years ago. A man brought the idea to Hokkaido at Asahikawa and the beans were then manufactured for the first time about ^{25^{or}} 28 years ago.

Sugared beans 2 cans	1	26
Scoured beans 1 "		45

This store makes in a year about ~~30,000~~ ^{30,000} lbs of sugared and scoured beans a year. $\frac{1}{3}$ of this amount is shipped to main island and run to Korea. $\frac{2}{3}$ of above are used in Hokkaido. Some variety, ~~Asajiro~~ & "Asajiro".

greenish white, is used
by this store. Father of
present owner brought
back idea to Hokkaido. We
were given a sample of beans
used in making the sugared
beans. "Fraisode" is
name of variety which is
also used as a green vegetable
bean.

Main store is at Asahikawa
and the branch store where
at Supporo make 30,000
lbs. per year.

Miso & Soy Sauce Factory

White Miso - Soybeans
and rice. Rye is also
used with soybean in
making

The dry beans are boiled
at once that is when
the water boils up just

The beans are then left in
the big kettle of hot water
until next day, ~~about~~
9. AM. boiled and then
left until next morn-
ing at 9. AM. Then next morn-
beans (boiled) are taken
out and mixed with
rice which has bacteria
on it. The rice and
~~all~~ any beans are then
mashed together, after
mashed together, the mass
is put in wooden tubs
and kept for year. Twice
during the year the
material is taken from
tubs and washed again.
While washing the salt
is added. If 1 bu. of

say beans is used, $\frac{1}{2}$
bushel of salt is used
and $\frac{1}{2}$ ^{bushel} rice ~~bushel~~ is
used. The rice is steamed
~~and~~ until soft and
then spread out on a
flat or on a mat. Some-
times yeast bacteria is
mixed with rice. The
rice with bacteria is
allowed to stand about
5 days in warm dark
room about $65^{\circ}-70^{\circ}$ F.
Sometimes kept 4 days
and sometimes 6-7 days
but should not be kept
more than 10 days.

The first washing is
put in big tub and
twice in yarn is taken
out washed, at the
third washing the

material is put in
small tubs for shipping
Barley and rye are not
used much any more
as people favor the rice
miso. Natural miso
takes most salt.

Other forms are made
where not so much salt
is used and this is
made quicker.

In quick miso, it
can be made in a week or
ten days, but little salt
is used, and will not
keep so long.

Good miso should not
be more than 3 years. The
best miso is 2 to 2 1/2
years, at this time the

misso is said to have its
great food value and
flavor.

One big tub holds
3000 Kan. This factory
makes 19 large tubs
and 20 small tubs
(holding 1500 Kan. each).

They make there 39
Tubs of misso yearly.

People in Hokkaido
use about 10 times
the above amount yearly.
That is this factory produces
10% of the misso used
on the island.

Uses: Used principally
in making misso soup.
Sometimes used a little
for pickling radish, melon
and cucumbers.

Friday, Oct. 4, 1929

Cloudy and cold.

Visited sugared bean factory which puts out 100,000 bins of sugared beans annually. Of this amount 50% consists of scanned sugared roasted soybeans. This factory also puts up sugared adzuki beans, sugared peanuts, and colored sugar candy used for decorating.

Green scanned soybeans are most popular - a better product and more attractive. Rice flour is used instead of wheat which gives the product a lustre. The beans in which wheat flour is used is less attractive and used most by the

groover class while the
green beans are used by the
higher class.

The seaweed used is a
powdered form.

2 cans green colored sugar
coated (seaweed) roasted
any bean at \$1.10 \$ 2 20

This product was first
made 10 years ago and
patented 5 years ago.

Can box to & from factory	10
" " " " " (inter)	10

About 5 P.M. yesterday
after visiting a micro and
sugar cane factory, we found
a confectionary factory
producing sugar coated
roasted any beans. The
work was through for the
day but the owner advised
us if we would come

Tomorrow he would
be glad to show us the
manufacture of the roasted
beans and the whole
process of angui cooking.

The name of the factory is,

"Juziyo Confectionary
Seiji, Suzuki

Rokuchō-me E.

Kita Sanjō.

Sapporo, Japan.

About 10. A.M. we went
to the factory and were
received by Mr. Seiji
Suzuki, owner. We were
first treated to tea and
a dish of the green sugar
coated saybeans. We
were also served Oden
grapes, apples, orange.

coated roasted peanuts,
sugar coated roasted
adzuki beans, sugar
coated cakes, and several
other confections made
by this factory.

We were then taken out
in the work rooms and
started at the beginning
and followed the entire
process through of making
sugar coated roasted
soybeans.

The Aojori variety is
used entirely as it is
said to be sweeter and
have a higher protein
value. The beans are first
soaked in warm water
for 12 hours. After
draining, the soaked
beans are then put

in the roasting pans
much like our corn
poppers on the bottom
and top. The sides are
galvanized iron. The
roasters are identical
with those described
yesterday. The fire (hears) ^{was}
was fitted hot and
the beans were roasted
for 20 min. to one-half
hour. After roasting
the beans were placed
in a flat with a screen
bottom and then placed
in a mixer where the
powdered seamed
was mixed with them.
After the roasted beans
had received their
coating of seamed, they

were then placed in another mixer and received a coating of rice flour. After the rice flour coating they were placed in another mixer where they received a coat of green sugar syrup. The tams were then placed in small boxes with screen bottom and dried. They were now ready for the larger iron pans which are placed at an angle.

① . As the pan revolves green syrup is sprinkled over them with a long wooden handled tin dipper . The first pan is ~~the same~~ over a low

steam vent. The beans
are constantly shovelled
around during the
revolving of the pan
and syrup sprinkled
over. The beans are
passed through or in
three different pans
over different degrees
of heat. The last having
the highest heat which
is not sufficient to
melt the sugar. The beans
thus receive three
coatings of sprinkled
sugar syrup and
give them a roughened
irregular appearance
as will be noted from
the finished product
sent in under D.C.M.

No. 1435.

The product is the invention of the present owner who made this product first 15 years ago and had it patented about 5 years ago. This product is the most popular of the sugar coated roasted soybeans. It is consumed mostly by the better classes of Japanese.

This factory puts out about 100,000 kiai of confections a year, 50 per cent of which is the sugar, scoured coated soybeans. The scoured is said to give the beans a better flavor and also aid

the digestion of the beans.

The powdered seasoned is also the idea of the present owner. The seasoned in long strips, about 30 in, and about 2 in wide is straightened out or flattened out by girls chewing the strips about an iron peg, the shape of a blunt thrashing implement tooth.

†. After being flattened and smoothed out, the strips are roasted until quite brittle. They are then placed in a grinder and ground rather coarsely, after this, the material is

run through another mill which grinds it into the fineness of sugar. It is a very appetizing product and would make an excellent soup.

After viewing the process we were given the following samples for our sugar bean exhibit

- 1st - Rice flour
- 2nd - powdered seaweed
- 3rd - roasted beans
- 4th - roasted beans

covered with seaweed and rice flour.

- 5th - roasted beans covered with seaweed, rice flour and 1st.

coating of green sugar syrup.

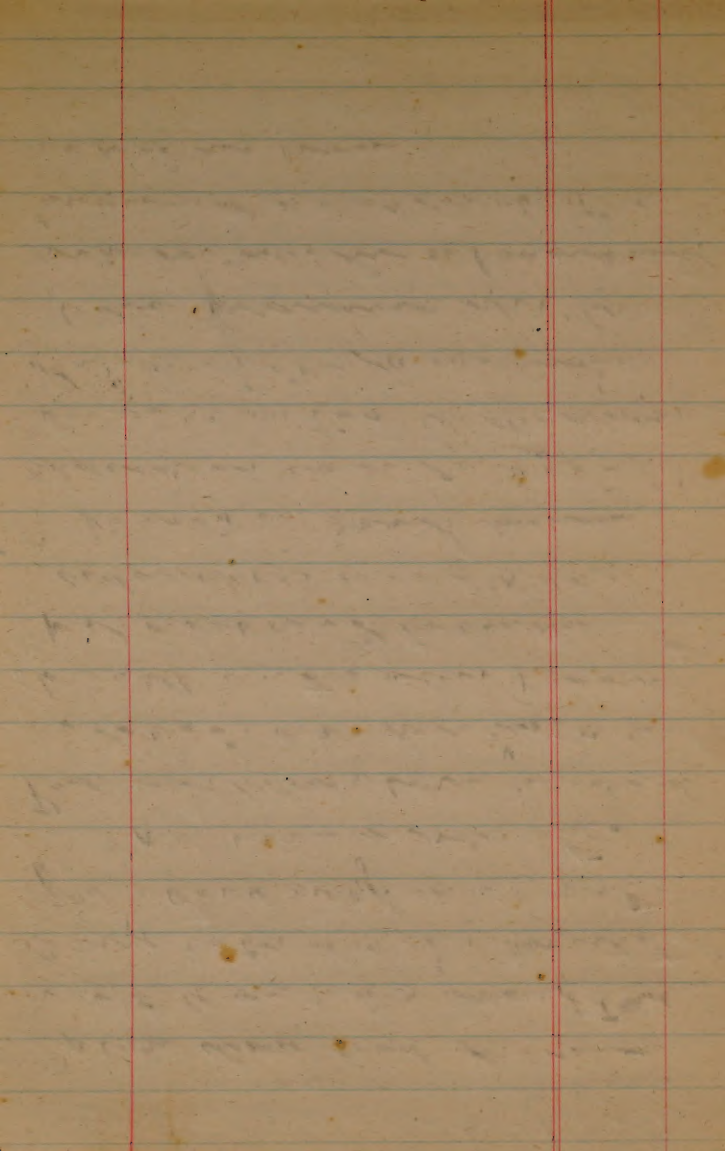
- 6th - Finished product.

We also purchased
two large cases of the
sugar coated beans
for our soybean Exhibit.

After our visit to
the factory, went to the
office and wrote up
the various soy bean
products obtained
yesterday and today.

Went to bank where
received by wire the 500
you sent for yesterday
to the Tokyo Bank.

Am running wrote
up notes and finished
expense account for
September.



Saturday Dec. 5, 1929.

Cloudy and cool. In morning worked on notes from Flora of Yezo by Dr. G. Yendo. Went to office and worked on notes and soybean products.

Package of soybean products purchased in Sapporo Dec. 3 and 4 put up in Parcel Post and sent to Washington.

About 1630 went to the Colonization bank and closed account. After lunch went to Maruyama Park to gather seed of the *Lupediza* sp. which grows quite abundantly in cut overland. The seed is now mature and about a quart of pods was gathered.

Seed was also gathered

of ~~two~~ acorns, magnolia,
and a sample of soil
from about the roots of
the Liriodendron sp.

In the evening after
supper went with Sugatake
to the Maruyama Park
Imperial shrine where
they held services. It
was rather impressive
with the wood fires
burning along the way
and near the temporary
shrine where the services
were held. We watched
the rites of the offerings
of the Shinto Priests
and representatives
from different schools
and organizations.

After returning from
the Park we went to

To the Kanneya Restaurant
which opened tonight.
We met Mr. Matsuya
of the Forestry Dept. who
was with us on our
trip to Nopporo in
obtaining from the
forest reservation about
Nopporo.

Mr. Matsuya told us
of the use of soy beans
for green manures. It
is said that the soy-
bean is the most satisfactory
for green manure in
Hokkaido because of its
general adaptability.

When a new nursery
is to be started the
land is planted to

row trees and the crop
is turned under during
the fall and then the
masonry material put
out. In other cases
row trees are planted
in rows between the
rows of small nursery
trees, and plowed under
during the fall.

Casa fare to Marrynna Park & return	10
.. .. interpreter	10

Sunday, Oct. 6, 1929,

Cool and clear. In the morning finished up my expense account. Also worked on Hokkaido botany notes.

After lunch went to the office and finished up notes on seed collected yesterday in Maruyama Park.

In the afternoon went out to the home of Mr. and Mrs. Yuoo to pay a farewell visit.

Mr. Yoshinori Yuoo,
No. 1, Higashi 8-Chome
Chitose.

Sapporo City, Hokkaido,
Japan.

Mrs. Yuoo desires U.S. Dept.
bulletins on cooking and

would like especially the
Brent Summer Cookbook,
A

Monday, Oct. 7, 1929.

Cloudy and cool.

Left Sapporo 8.50 AM.

Arr. Kotoni 9.00 AM.

Left Kotoni 10.06 AM.

Arr. Sapporo 10.17 AM.

Left for Kotoni to pay
farewell visit to experiment
station people with who we
have been more or less associated
with during our stay in
Hokkaido.

On the way to the Super.
Sta. we met Dr. Abiko who
was on his way to the train.
He bid him farewell and
he advised us that he had
some seed at the station
and some of the Strawberry
plants (Kotoni variety).

At the station we saw

Prof. Tanna, the sugar beet
man, Dr. the ento-
mologist, and out in the
field the horticulturist, Mr.

We went to look over
the soybean variety rows
in the entomology plots.
We found the Olysius
variety very badly infested
with the pod borer moth.
A black seeded variety
was more or less affected.
Examination of the
Waschadate (smooth early)
showed only one pod with
a pod borer.

Sugar beet work was in
full swing. The beets from
the experimental plots were
being washed and cut up.
Fitting back to Sapporo we

went to the Imperial Office
where we had a short farewell
visit with Dr. Ito. We also
saw his assistants who were
with us botanizing in the
Forest Reservation near Noyoro.
We found that Dr. Miyabe
had gone to Tokyo.

After our visit with Dr. Ito
we went to the Botanic Garden
and collected a small amount
of seed and some willow cuttings
have peculiarly curled leaves and
triated branches and stems.
We also bid farewell to Mr.
Joshin Dr. Ito's assistant in
charge of the Botanic Garden.

At one o'clock we had
Mr. Hama and Mr. Guro
of the Yamato Seed Co. to

Lunch at the Ken Kameya
restaurant. After lunch went
to bank where I found a
letter confirming wire
of 500 yen.

Went to office and wrote
up some seed samples, and
strawberry plants, 8 Salix cuttings

Went to room and finished
packing for Hokkaido departure.

In the evening, the Guroo
called and we all went to
Ruby's for lunch.

Paid hotel bill 101.60 yen
for 8 days

Tuesday, Oct. 8, 1929.

Cloudy and mild.

Left Sapporo at 7.25 A.M.,
for Hobodate.

Ry. fare - Sapporo to Akita (3)

" " ^{Gilbert} " "

" " Margaret " "

At the station, several of our
Sapporo friends were at the
station to see us off. We were
given candy, basket of apples,
purooka, post cards by hotel,
grapes, pie, and pickles by
friends.

As we pass through the country
another method of curing rice
was noted quite similar to
curing peanuts in the U.S.
A single pole was stuck in the
ground and the bundles of
rice placed about the pole.

The fall landscape shows
up most beautifully in
the foothills and mountain
where the sumach in all
shades of red and yellow
grows very abundantly.

About 9 A.M. we passed
through a very extensive
apple growing section. The trees
were loaded with a brilliant
large red fruit.

In some of the grain fields
red clover was noted between
the rows of grain stubble.

The apple region was just
below Shiranetsu toward
Soyuzoro and extended for some
distance.

Soybean fields were noted all
along the way. The leaves were
all yellow and falling. It will
probably be 10 days or two

weeks before harvest

Hill grapes were seen growing abundantly all along and the tans were most beautiful shades of red or pink with the colors of the sumach added to the beauty of the landscape.

No soy bean fields were noted harvested though a good many appeared to be ready to harvest especially as we approached Hokkaido.

We had excellent views of Mount Komagatake from various sides and some rather close-up views of the lava flows. The mountain had a very much different appearance from that we saw on our visit to Hokkaido.

The latter part of May. The
lava and what looked to be
sand had flowed to a
considerable depth at the
base of the mountain and
the whole gave a barren
desolate appearance.

Rained more or less during
the day but toward the middle
of the afternoon cleared up.
We, therefore had much
better views of the mountain
scenery.

Rice has been cut for the
most part, and is cured
in three different ways.

1. - Bundles placed on the
curing racks as observed
in Saginaw and Upper
and central Hokkaido
2. - the poles about 8 feet
high and much as in

cure patients in the U.S.

3 - In small round sick
about 8 feet high and about
6 ft. in diameter, and
capped with rice bundles.
We arrived at Hakodate
at 4.20 P.M.

We left for Aomori, on
the main island by ferry
at 5.30 P.M. and arrived
at Aomori at 9.40 P.M.

We stopped at the
Inn the rate being
4.50 yen per day if Japanese
meals are taken. If special
meals are taken the price
is higher.

Soy bean doct^r desired.

Time of planting —

Method of planting —

Width of rows. Method of making rows.

Space of plants — Method of covering —

Methods of cultivation —

Times of cultivation

Fertilizers

Time of harvest

Stage of plant maturity.

Method of harvesting

Pulling

Cutting

Method of curing.

Method of Threshing —

Roller.

Flails

Diseases

Insects

Storage

Prices received by farmers

Marketing

Utilization

Makkanai to Ashigawa	9/13	- 3.56
Ashigawa to Sapporo	9/14	- 2.03
Bus 11 To Nagayama	9/14	- .20
Suburto to Ashigawa	9/14	- .13
Hotel Utsunomiya		5.00
		10.94

Pictures

- 1- Cutting soybeans. ✓
- 2- Shooking soybeans ✓
- 3- Making rows for soybeans ✓
- 4- Planting soybeans. ✓
- 5- Covering soybeans. ✓
- 6- Closeup of planted beans. ✓
- 7- Threshing soybeans ✓
- 8- Cleaning soybeans.

unrecorded

Pernovospora trifoliorum

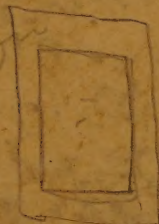
Sextoria glycinis Kunze

Aschochyta

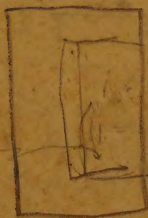
130 m.

2550 m.

Thunbergia



V. ciliatum



2
0.5
2000

A. F. Stevens

Crataegus Jozania Oliv. & Bloch

